

WHAT IS CLAIMED IS:

1. A disk drive comprising:

an optical head for emitting a laser beam so as to illuminate a disk-shaped storage medium thereby writing or reading data on or from the disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, pre-pits being formed on lands between adjacent grooves;

a push-pull signal generator for generating a push-pull signal from reflected-light information detected by the optical head;

an amplitude variation signal generator for generating and outputting a fundamental amplitude variation signal indicating the fundamental amplitude variation of the push-pull signal;

an offset signal generator for generating an offset signal;

a reference signal generator for generating a reference signal by adding the offset signal generated by the offset signal generator to the fundamental amplitude variation signal generated by the amplitude variation signal generator; and

a pre-pit detector for comparing the push-pull signal with a reference signal and outputting a comparison result

as a pre-pit detection signal.

2. A disk drive according to claim 1, wherein the disk-shaped storage medium represents, using the pre-pits, address information indicating an address on the disk; and

the disk drive further comprising an address decoder for acquiring address information represented by the pre-pits, from the output of the pre-pit detector.

3. A disk drive according to claim 1, wherein the fundamental amplitude variation signal is a signal reflecting at least the amplitude variation of the push-pull signal due to wobbling of grooves and due to noise.

4. A disk drive according to claim 1, wherein the amplitude variation signal generator includes

a charging circuit for charging a capacitor in response to an increase in amplitude of the input push-pull signal, in a peak holding manner with a predetermined time constant; and

a discharging circuit for discharging the capacitor such that the charged voltage of the capacitor falls down with a predetermined time constant;

whereby a signal corresponding to the charged level of

the capacitor is output as the fundamental amplitude variation signal.

5. A disk drive comprising:

an optical head for emitting a laser beam so as to illuminate a disk-shaped storage medium and detecting light reflected from the disk-shaped storage medium thereby writing or reading data on or from the disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, pre-pits being formed on lands between adjacent grooves;

a push-pull signal generator for generating a push-pull signal from reflected-light information detected by the optical head;

an amplitude variation signal generator for generating and outputting a fundamental amplitude variation signal indicating the fundamental amplitude variation of the push-pull signal;

an offset signal generator for generating an offset signal;

a reference signal generator for generating a reference signal by adding the offset signal generated by the offset signal generator to the fundamental amplitude variation signal generated by the amplitude variation signal generator; and

a pre-pit detector for comparing the push-pull signal with a reference signal and outputting a comparison result as a pre-pit detection signal.

6. A disk drive according to claim 5, wherein the disk-shaped storage medium represents, using the pre-pits, address information indicating an address on the disk; and

the disk drive further comprising an address decoder for acquiring address information represented by the pre-pits, from the output of the pre-pit detector.

7. A disk drive according to claim 5, wherein the fundamental amplitude variation signal is a signal reflecting at least the amplitude variation of the push-pull signal due to wobbling of grooves and due to noise.

8. A disk drive according to claim 5, wherein the amplitude variation signal generator includes

a charging circuit for charging a capacitor in response to an increase in amplitude of the input push-pull signal, in a peak holding manner with a predetermined time constant; and

a discharging circuit for discharging the capacitor such that the charged voltage of the capacitor falls down

with a predetermined time constant;

whereby a signal corresponding to the charged level of the capacitor is output as the fundamental amplitude variation signal.

9. A method of detecting pre-pits formed on a disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, address information being represented by the pre-pits formed on lands between adjacent grooves, the method comprising the steps of:

generating a push-pull signal from reflected-light information obtained when the disk-shaped storage medium is illuminated with a laser beam,

generating and outputting a fundamental amplitude variation signal indicating the fundamental amplitude variation of the push-pull signal;

generating a reference signal by adding an offset signal to the fundamental amplitude variation signal; and

comparing the push-pull signal with the reference signal and outputting a comparison result as a pre-pit detection signal.

10. A pre-pit detection method according to claim 9, wherein the fundamental amplitude variation signal is a

signal reflecting at least the amplitude variation of the push-pull signal due to wobbling of grooves and due to noise.

11. A pre-pit detection method according to claim 9, wherein the amplitude variation signal is produced by
charging a capacitor in response to an increase in amplitude of the input push-pull signal, in a peak holding manner with a predetermined time constant;
discharging the capacitor such that the charged voltage of the capacitor falls down with a predetermined time constant; and
outputting a signal corresponding to the charged level of the capacitor as the amplitude variation signal.